

THE TOC Times

Avraham Y. Goldratt Institute

Quarterly Edition - March 2001

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An editorial

In the previous *TOC Times Quarterly Edition*, I posed the question, "Education...expense or investment?" At issue was the expectation of value associated with the budget (\$346 billion) organizations allocated to post-secondary education, and the resulting movement toward knowledge strategies for learning organizations.

So, what does all this have to do with the title of this editorial? We'll get back to that in a little bit. First, let's have a true-false test. Be brave; be confident. You have a 50-50 chance!

True or False?

1. Physical assets determine the wealth of an organization.
2. Cost is the key determinant to competitive advantage.
3. Go to school, graduate, and work is a viable model for sustainable employment.

Did you answer "true" to any or all of the above statements? The good news is we'll discuss why those paradigms have changed.

Did you answer "false" to all of the above statements? Great! You've recognized the changing nature of the competitive landscape. *How effective is the change culture created in your organization to successfully navigate through the effects from these paradigm shifts?*

Each of the above statements is a subject that can fill volumes unto themselves. For brevity's sake allow me some leeway as we lightly examine each of the above true-false statements:

#1. Physical assets determine the wealth of an organization.

This was true during the era of the Industrial Revolution. Factories, assembly lines, and mass production using manual skills were the primary means of converting raw materials to finished goods in the creation of wealth. Included in this equation was management's traditional role in maintaining efficiencies and reducing variances. Manufacturing still plays a vital role, but today we view them as part of supply chains that market, design, manufacture, distribute and sell goods. But, is the premise for creating wealth the same? Do you feel the impact of communications technology and the Internet/Intranet? Those who improve their knowledge of processes, customers, and competitors, and man-



STEVE SIMPLICIANO
EDITOR-IN-CHIEF



A Reader's Response to "My Thoughts on Project Requirements"

By Jay Munson

In the previous TOC Times Quarterly Edition, Michael W. Bromley, MBA, PMP, shared his experience about the importance of requirements identification. At the conclusion of the article, Rika Visser poised these questions to the readers: How can TOC and the Critical Chain solution be used to develop upfront requirements? How do you deal with conflicts that develop down the line between contractor/client and between project manager and resources? What happens to time, budget and scope when there is a change of mind halfway through the project? Join us in reading Jay Munson's reply.

Let's face it, when it comes to managing projects, life can be quite unpredictable. As Michael Bromley pointed out in his article, things can change. And no matter how well you did during the requirements generation process at the beginning, the project will be judged by the standards in effect at completion. Critical Chain attempts to mitigate the impact of poor requirements generation and changing requirements with two major

mechanisms: Network Building and Buffer Management.

Building a Critical Chain network begins with identifying the project's Objectives, Deliverables, and Success Criteria. It is important to note that the term Success Criteria can be slightly misleading. Many groups interpret this to mean only the specifications. AGI goes beyond the classic interpretation, expanding the meaning to include the necessary conditions for project success. For example, having a successful project may include laws, regulations, or policies that we *not* violate. Or, having a successful project means certain negative side-effects must *not* happen.

As with most project management methods, the beginning is the most critical part in the entire process. Failure to fully capture all requirements at that time will lead to missing dependencies and a high likelihood of rework later on in the project. It is important that this step be accomplished with full buy-in from all the major stakeholders.

Another safety net occurs during network development; building the network from the end to the beginning and gaining the buy-in from the internal expert resources that all tasks, dependencies, and requirements have been captured. Unlike linear network development from start to finish, AGI's approach disciplines team members to capture exactly what they need to begin a task. The benefit of this unique approach often results in uncovering more of the hidden/assumed requirements and a much better understanding of the exit criteria for predecessor tasks.

As every project manager knows, once a project begins, new requirements are disastrous. This addition could be a new law or modifications to the project itself. While the new requirement isn't necessarily bad, the impact is that it threatens project scope, time, and cost performance by forcing the manager to choose which

one will be cut to make room.

The AGI approach to Critical Chain Buffer Management gives one the diagnostic tools to determine the impact of changes on cost, scope, and schedule. By looking at the Project Buffer and Budget Buffer, a manager can see if there is any room for new requirements without cutting scope. If it appears the buffers can easily absorb the addition, then the three indices of project performance aren't really threatened at all. If the buffers can't absorb the addition, the AGI approach has the ability to model the changes on the network, challenge existing assumptions and dependencies to make the plan as efficient as possible. And if necessary, respond to the problem with a clear understanding of how bad the impact will be, and the exact resources required to absorb the additional work.

Jay Munson resides in Southern California and is currently a Theory of Constraints Facilitator for the Avraham Y. Goldratt Institute. His background includes over ten years with the United States Air Force with experience in basic research and engineering, program management, operations, industrial engineering, organizational design, and manpower management. He has extensive experience with TOC's Critical Chain Multi-Project Management, Strategic Planning, Management Skills and the TP.

AGI's Critical Chain Multi-Project Management enables organizations to drastically reduce cycle time. Go to www.goldratt.com/tocworld2001/2000list.htm to view summaries of success stories presented at TOC WorldSM 2000.



The TOC Times

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AGI
442 Orange St.
New Haven, CT 06511 USA
+1 203 624 9026

Steve Sempliciano Editor-in-Chief
Rika Visser Senior Editor
Robbin Inorio Content and Copy Editor
Sylvia Ebbson Content and Copy Editor
Jennifer Foley Technical Editor

All contributions for The TOC Times should be sent to Rika Visser, AGI 442 Orange Street, New Haven, CT 06511 or RikaVisser@goldratt.com
The TOC Times is circulated to all members of the AGI network.

AGI Offers New Supply Chain Logistics Workshop

“Ensuring fast, reliable availability of products and services”. That is the key objective of any organizations logistics. Sometimes this requires focus only on the manufacturing operations (Internal Supply Chain) and at other times we also need to address the extended system that moves product closer to the end-user (External Supply Chain).

Over the years, AGI’s TOC Experts have implemented customized solutions to address system constraints to “fast, reliable availability” with a combination of the TOC Solutions for Production and Distribution. We are now offering a unique workshop that details how the blending of these solutions can improve your Supply Chain.

Introduction to Supply Chain Two-Day Workshop Description

There are many different types of supply chains for organizations to manage. No matter whether supply chains are small or large, internal or external, or in manufacturing, service, or distribution; they are difficult to manage due to statistical fluctuations and dependent events.

Introduction to Supply Chain - The TOC Way lays out the fundamentals and practicalities of implementing the common sense approaches in Dr. Goldratt’s books in an entertaining and interactive way. The first day of this two-day program lays out the underlying root conflict that leads to many of the problems of supply chains (both internal and external), such as:

- Due dates are often missed
- There is too much overtime
- Original plans have a very limited life
- Priorities are constantly shuffled
- It is difficult to respond to urgent customer orders
- There are frequent materials/parts shortages

- There is too much expediting
- Production lead times are too long
- Inventory levels are too high
- In spite of high inventories, we’re short of the inventory we need now
- Too many missed sales to the end user/consumer
- There are too many emergency shipments
- The amount of returned product is too high
- Too many orders are shipped incomplete

The first day continues by taking the participants systematically through the direction of the integrated solutions (often referred to as *Drum, Buffer, Rope* and *Buffer Management*, and *Replenishment*) as well as the framework for implementing these solutions internally and externally.

The second day is customized to take each of the participants through detailed answers to their specific issues in applying the *TOC Supply Chain Solution*. The participants are broken into small groups based on their current environments. A dedicated expert reviews with them the questions they wish to have answered that day. The expert then takes the participants through simulations, exercises and discussions specific to answering their particular questions regarding the details of the solution and its implementation in their environment. This customized second day allows the participant to get deeper into the applicable parts of the *TOC Supply Chain Solution*. The last part of the second day is spent figuring out what are the appropriate next steps for the participant to take.

The participant leaves with many of their detailed questions asked and answered and a personal contact, their dedicated expert, to answer questions after the session.

Who should attend?

- Anyone who has read *The Goal* and *It’s Not Luck* and wants to un-

- derstand the underlying processes.
- Anyone who is struggling in managing any aspect of a supply chain (production, distribution, resource management).
- Anyone who is responsible for improving the supply chain.
- Anyone who has to manage customer service.

This two-day workshop can be conducted at your site for the key decision makers. Please call our Client Services department at 1-800-394-GOAL or 1-203-624-9026 or email sylvia.ebbson@goldratt.com or robbin.inorio@goldratt.com for details.

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New Introduction to Project Management Two-Day Workshop

There are two different types of project management efforts: the stand-alone project and the multi-project. Whether your organization manages stand alone or multiple projects, those projects are small or large, their customers internal or external, in product development, construction, design, IT or service; they are difficult to manage due to uncertainty and the fact that they involve three different and opposing commitments - due date, budget, and content

Introduction to TOC Project Management lays out the fundamentals and practicalities of implementing the common sense approaches in Dr. Goldratt’s book *Critical Chain* in an entertaining and interactive way. The first day of this two-day program lays out the underlying root conflict that leads to many of the problems of project management environments, such as:

- Existing project work is not complete before new projects require a shifting in priorities
 - The organization is too slow re-
-

- sponding to important opportunities
- Managers feel constant pressure to increase staff to handle peak project loads
- Promised lead times are longer than desired
- There are difficulties completing projects on time, within budget and with full content
- There is too much rework activity
- Some projects are abandoned or completed without the organization gaining the promised benefit
- Project Managers and Resource Managers have frequent conflicts about priorities and resource commitments
- Problems in one project cascade into problems in other projects

The first day continues by taking the participants systematically through *the direction of the solution (often referred to as Critical Chain and Multi-Project Management)* as well as the framework for implementing the solution in the highly successful AGI Way.

The second day is customized to take each participant through detailed answers to their specific issues in applying the *TOC Project Management Solution*. The participants are broken into small groups based on their current environments. A dedicated expert reviews with them the questions they wish to have answered that day. The expert then takes the participants through simulations, exercises and discussion specific to answering their particular questions regarding the details of the solution and its implementation in their environment. This customized second day allows the participant to get deeper into the applicable parts of the *TOC Project Management Solution*. The last part of the second day is spent figuring out what are the appropriate next steps for the participant to take.

The participant leaves with the answers to many of their detailed, specific questions and a personal contact,

their dedicated expert, to answer questions after the session.

Who should attend?

- Anyone who has read *Critical Chain* and wants to understand the underlying processes
- Anyone who is struggling in managing any aspect of project management (head of engineering, project resource management, head of project management office, business head)
- Anyone who is responsible for improving the project management processes
- Anyone who has to manage project customer service

This two-day workshop can be conducted at your site for the key decision makers. Please call our Client Services department at 1-800-394-GOAL or 1-203-624-9026 or email sylvia.ebbson@goldratt.com or robbin.inorio@goldratt.com for details.



Reality Check

continued from page one...

age such knowledge for competitive advantage have the high ground. In this New Economy, intellectual assets determine the wealth of an organization.

#2. Cost is the key determinant to competitive advantage.

This *was* true particularly when competition was based largely on the supplier's perception of value (e.g., the sum of the efforts to make a product/service available). The practice of pushing finished goods to market to increase efficiencies and minimize cost results in supply outweighing demand. Effects stemming from this practice include zeroing inventory, minimizing costs to maintain margins, and discounting on volume to boost margins. Given the growing focus on identify-

ing and satisfying customer needs, and the importance of speed to market, reducing manufacturing lead time and project cycle time is the key determinant to competitive advantage.

#3. Go to school, graduate, and work is a viable model for sustainable employment.

This was true when companies provided long-term employment opportunity (and therefore, stability) to its employees. The practice of "re-sizing" (re-engineering, re-structuring, right-sizing, and down-sizing) to increase the chances of an organization's survival in a market downturn proved only one thing: individuals can no longer depend on companies for stable employment. They say that the shelf life of knowledge is 18 months [Doesn't that seem odd given a four to six year investment? That's another story for another time; but its still a story near and dear to my heart]. Given the short shelf life of knowledge, one has to continue to grow their knowledge base and skills in order to create value for their employer, and remain competitive in the job market. That is to say, the pyramid of learning has become inverted. Learning is no longer a series of discrete events culminating in 16 to 18 years of education. Continuous education and lifelong learning are becoming the new mantras with the realization that one has at least 40 years of employable productivity. One must continually refresh their skills and stay abreast of new knowledge to continually create their own sense of security. Lifetime employment is giving way to lifetime employability.

So, what does all this have to do with the title of this editorial? Well, let's do a gut check.

"We know that intellectual assets determine the wealth of an organization." An organization that embraces this paradigm shift doesn't view education and training as an expense.

Sourcing education and training comes along with a high expectation of return on investment. In fact, a viable strategy for knowledge management has been deployed. When its time to tighten the proverbial budget belt, training is the last thing to get cut. Does it exist?

“We know that manufacturing lead time and project cycle time reduction is the key determinant to competitive advantage.” An organization that embraces this paradigm shift bases its value proposition on being a fast, flexible organization that identifies and is responsive to market needs. So there is no need to evaluate performance using cost based measures, right? The same organization doesn’t believe in balanced capacity, and focuses quality improvement on constraint performance. Does this exist?

“We know that lifelong employability supported by continuous learning and lifelong learning are essential to creating intellectual capital.” An organization that embraces this paradigm shift actively seeks out providers of content that helps convert knowledge into business value. That means they reapply relevant content to become their best business practices, and reward teams for innovation and excellence. Moreover, people are the last assets to let go. Does it exist?

One does not manage change – one engineers it. It isn’t something that happens by osmosis, it requires leadership. Dr. Warren Bennis, a renowned author in the field of leadership said, “Managers do things right. Leaders do the right things.”

How effective is the change culture created in your organization to successfully navigate through the effects from these paradigm shifts? It works best when you create instead of react to change. It works best

when champions bring stakeholders to embrace needed change.

TOC WorldSM 2001 and **JEMBA Symposium 2001** is your passport to engineering change. When it comes to the Theory of Constraints, experience *why* nobody does it better than AGI. *Don’t play catch up with reality.*



Readers’ TOC Experiences

Rev. Anthony J. Ranada, SVD, Philippines

[I am] acknowledging receipt of the information below and thanking you for it. More power to the publication, especially in putting more people in touch with each other more than ever before.

This is also a goal and mission of so many NGOs [NPOs] in civil society. Included is my humble organization called the PRESO FOUNDATION (Prisoners’ Rehabilitation Services Operations) whose goal and activities may be found [at] our Website at communities.msn.com/PRESOFOUNDATION

As an MBA from the most prestigious Philippine educational institution at University of the Philippines - Diliman, let me say that although I’m no longer in a business firm to maximize profits; [I am] in civil society work to maximize services, including

education, to the marginalized in society. For this reason, I as a Rotarian helped bring to the Philippines the Theory of Constraints for Education [with its] CEO Kathy Suerken. The group of teachers has grown to more than 800 TOC graduates. We’re preparing to spread the good news further and better.

Kishan Gopal Biyani, India

As promised, below is the summary of our experience.

Our rolled product iron plant is ‘V’ shaped and we were doing production planning and scheduling manually. As the volume started increasing we got into [the] following serious problems:

- Could not track material properly
- Could not adhere to due-date delivery schedule
- Process cycle time and WIP increased
- Fire-fighting time increased.

We started looking for a planning and scheduling module and came across a concept based on the Theory of Constraints. We read the books, articles and had long discussions on TOC, which convinced us of the soundness of [the] basic concept. We decided to go for [an] Advanced Planning and Scheduling module based on TOC.

Being an old plant (38 years in operation) and considered a successful organization, we faced initial resistance from various levels. To overcome that we conducted training programs repeatedly. Books and articles on TOC were circulated for reading. People’s involvement started improving. After overcoming the initial teething problems, [the] Cold Rolling Mills were found to be the constraint in the manufacturing chain. The following steps were taken to evaluate the constraint:

AGI is proud to be a sponsor of Dr. Eli Goldratt's upcoming North America *Necessary But Not Sufficient* tour. For more details, please visit us at www.goldratt.com. Look for us on the following dates and places.

April 18 - Chicago
April 20 - Boston
April 24 - Atlanta
April 26 - Dallas
April 30 - San Jose
June 18 - Los Angeles

We look forward to seeing you there!

- Increase available time for production
- Reduce time per pass (setup time plus run time)
- Increase weight of input coil
- Reduce number of passes per finish pass
- Reduce scrap generation

While improvements on other factors gave incremental results, the major impact came by reducing [the number] of passes per finish pass from 3.6 to around 3.0 for the same product-mix. This was attained by increasing the table length of the Hot-Mill, which had capacity margin, and reducing output thickness from [the] design figure of 5mm and above, based on alloy and finished product properties, to 3mm and above. The improvement in production level was approximately 20% as against 5% anticipated earlier.

WIP decreased from 23 days level to 13 days and due date performance is also improving. Now we know the contributions per hour of the constraint equipment for each type of product, which we did not know earlier.

Based on this experience we applied the same concept in our Extrusion Plant. The results were equally encouraging. We are now in the process of implementing the APS module based on TOC in the Extrusion Plant also.

To spread this concept across the organisation we have recently distributed 20 copies of *The Goal*.



AGI Welcomes Two New Partners

Hugh Cole

Hugh is a Partner of AGI residing in Southern California. He has been associated with AGI since 1993. His work includes teaching and implementing the Theory of Constraints in its entirety - from the Thinking Pro-

cesses to its various Applications. Working in industries as diverse as electronics, metals, chemicals, and food processing, he is experienced in successfully applying TOC to production, distribution, project management, supply chain, marketing, sales and strategic planning.

With a client list that includes Fortune 500 organizations to family-owned businesses, Hugh works to help managers develop and execute a business management strategy that delivers bottom line results.

As part of his role as Partner, Hugh educates others to become TOC Experts, certifying them to implement the Supply Chain TOC applications the AGI way. He is also a frequent lecturer and speaker at universities and



HUGH COLE
PARTNER

professional organizations.

Prior to his association with AGI, he worked in industry for more than eighteen years holding both line and staff positions in

production, engineering and marketing. Over this period of time, his responsibilities covered a wide range - from plant and production engineering to Director of Operations over multiple plant facilities.

Hugh can be reached at hugh.cole@goldratt.com.

Bill McClelland

Bill McClelland is a Partner of AGI, living in the San Francisco Bay Area. During his 27-year career with Texaco Incorporated and the International Business Machines Corporation, he held senior management positions in Research & Development, Marketing,



BILL MCCLELLAND
PARTNER

Manufacturing, and Strategic Planning. Following that, Bill became Vice President of Product Management for a struggling Silicon Valley peripherals company

where he played a major role in a remarkable company turnaround by learning and applying the Theory of Constraints.

Since 1994, Bill has been helping companies around the world to improve their bottom line results through the application of TOC to strategic planning, marketing and sales, supply chain, project management, and day-to-day problem solving. He also teaches the TOC Thinking Processes (Jonah Program and Management Skills) to multi-company and inter-company groups as well as trains and mentors both client personnel and AGI Associates and Licensees to facilitate single- and multi-project management implementations.

Bill's clientele includes small to large companies in the high tech, defense, construction, medical instrumentation, biotech, mining, glass, chemicals and consumer goods industries. He is highly regarded as a TOC consultant and is a frequent speaker at professional organization meetings and conferences.

Bill can be reached at bill.mcclelland@goldratt.com



JEMBA Symposium

June 18-22 *in conjunction with TOC WorldSM 2001*

AGI's Joint Executive MBA Program Alliance

"The common corporate view [is] that MBA graduates are unprepared for the real world of business. Academic programs are flawed because even though most corporations are trying to create a more integrated approach to management, business schools continue their functional silos approach to business."

Crainer and Dearlove, *Gravy Training, the Business of Business Schools*

We all know that the consequences of managing in silos are detrimental to the organization as a whole. The question is, "How do we bring functions like strategy, marketing, accounting and finance, operations, engineering, information systems, and organizational development to work collectively?"

"If you keep on doing things the same way, you will keep on getting the same results!"

To preclude getting the same results, one must do things in a different way. But, given the limited time, resources and management attention expended on improvement - not to mention the energy and good will of people - *exactly what must be done differently?* How does one cause people in organizations to think "out-of-the-box" such that the results are far better than previous attempts, and have impact that is directly measurable to the bottom line?

Discover how TOC can be effectively incorporated into a knowledge strategy that can be measured directly to its impact on the bottom line, a strategy that will justify its investment in spades.

Designed to be engaging and interactive, the Symposium has been developed by JEMBA faculty from selected universities across the United States. Through dialogue, simulations, experiments, and games these master teachers of enterprise-wide integrated knowledge and practice will bring you to discover and experience the power and elegance of the Theory of Constraints (TOC).

"Frustrated with the inability of post-secondary education to satisfy the growing demands of the marketplace in the 21st century, corporations are investing more and more in corporate universities and learning centers and depending less on traditional universities."

J. Meister, *Corporate Universities: Lessons in Building a World-Class Work Force*

Are you frustrated in the search for real answers? Tired of chasing after stock answers for disconnected symptoms using fads that inevitably fizzle? Challenge conventional wisdom and expand the boundaries of your knowledge – safely – at the JEMBA Symposium.

JEMBA is designed with leaders, managers, and teams in mind who are responsible for organizational performance, continuous improvement, managing change, and education and training.

Faculty and administrators of traditional universities, candidates for terminal degrees, and students enrolled in masters-level programs are welcome to attend.

JEMBA Symposium 2001

in conjunction with AGI's annual TOC WorldSM conference

Online registration at www.goldratt.com. Register early and take advantage of special hotel rates. For additional questions, information or assistance about JEMBA/TOC WorldSM please contact us at +1-203-624-9026 or by email at rika.visser@goldratt.com or steve.simpliciano@goldratt.com.



TOC WorldSM 2001

June 19-22
Los Angeles

Do you agree that sustained advantage requires:

- Reducing manufacturing lead-time / project cycle time
- Building consensus / managing teams
- Developing of intellectual assets / creating change culture
- Focusing on customer needs

Are you effectively navigating the paradigm shifts required to position your organization for success? AGI will enable you to posture your organization for success now and in the future. TOC is enduring, and *no one does it better than AGI.*

TOC WorldSM 2001. A unique combination of conference, seminar and workshops – highly interactive and engaging, designed to help you achieve profitable results. This is your chance to learn first-hand how leading companies use TOC for remarkable and measurable success.

Hear keynote speaker Dr. Goldratt, best selling author and business pioneer. Share the experiences of people who have demonstrated key results when applying TOC in their organization.

This 4-day gathering will place new possibilities in your hands so you and your company can shine.

- *Client Presentations*
Hear directly from actual clients using TOC: how they managed change, achieved goals and continue to excel.
- *Educational Sessions*
Come away with a clear understanding of TOC as it relates to your specific environment. Know what it takes to move your company to TOC, and how to get it done efficiently and effectively.
- *Networking Opportunities*
Speak one-on-one with advanced and intermediate practitioners of TOC, or with those at the start of their journey. Join in candid discussions with the experts.
- *Industry-Specific Summit Sessions (By Invitation Only)*
If you're in the **defense** and/or **aerospace** industry, don't miss this high-level summit that will reveal how TOC is shaping tomorrow's competitive landscape.

If you are in the **healthcare** industry, join your colleagues in defining how TOC can best contribute to improving your industry.

Important: Please email us immediately at info@goldratt.com with your name, title, company and address to request your personal invitation.

- *Lunch and Table Discussion Groups*
Share your thoughts, opinions and work issues with peers and colleagues. Be invigorated by speaking with professionals who face the same challenges you do.
- *Software After Hours*
View the latest TOC software available to the market!
- **APICS** Bookstore offers a wide array of TOC-related publications.

Learn from the leading TOC experts that have enabled people to sustain a process of continuing improvement by:

- Consistently achieving fast, reliable availability of products and services, and
- Providing products and service offerings that the market clearly acknowledges satisfies its needs

Competitive advantage demands both, and with AGI they can be achieved quickly.

With 15 years of proven experience in achieving bottom line success, AGI is the world's largest firm in the implementation and education of TOC.

TOC WorldSM 2001

Changing the way you think about business so you can change the way you do business.

Register early and assure your place today.

Visit www.goldratt.com for the details. See you there!

TOC WorldSM 2001 Schedule

Monday June 18	Tuesday June 19	Wednesday June 20	Thursday June 21	Friday June 22
Registration - Continental Breakfast - 7:00 - 9:00 AM				
	Welcome Remarks Dale Houle, Managing Partner	Dr. Eliyahu M. Goldratt Keynote Speaker 9:00 - 10:30 AM	Client Presentation 3 9:00 - 9:45 AM	Client Presentation 7 9:00 - 9:45 AM
		Coffee Break 10:30 - 11:00	Client Presentation 4 9:45 - 10:30	Client Presentation 8 9:45 - 10:30
		Client Presentation 1 11:00 - 11:45 Client Presentation 2 11:45 - 12:30	Coffee Break 10:30 - 11:00	Coffee Break 10:30 - 11:00
		Lunch 12:30 - 2:00 PM	Client Presentation 5 11:00 - 11:45 Client Presentation 6 11:45 - 12:30 PM	Client Presentation 9 11:00 - 11:45 Client Presentation 10 11:45 - 12:30 PM
		A1 Project Management Multi-Project Synchronization	Lunch 12:30 - 2:00	Closing Remarks
		A2 Strategic Planning Overview of TOC for Strategic Planning (part 1 of 2)	C1 Project Management Buffers: Modeling & Tracking Non-Linear Variability	
		A3 Supply Chain Sizing Replenishment Buffers	C2 Strategic Planning Setting the Direction of the Company (part 1 of 2)	
		A4 "Jonah" Upgrade Lone Jonahs	C3 Supply Chain Strategic Placement of Constraints/Plant Design & Layout (part 1 of 2)	
		A5 Day to Day Communication Skills Conflict Resolution	C4 "Jonah" Upgrade Developing the Core Conflict Cloud	
		A6 Overview of TOC for Supply Chains (part 1 of 2)	C5 Day to Day Communication Skills Team Building (part 1 of 2)	
		A7 Finance/Measurements - TOC Decision Making Financial Measurements	Coffee Break 3:30 - 4:00	
		Coffee Break 3:30 - 4:00	D1 Project Management Critical Chain in an EVMS Environment	
		B1 Project Management Advanced Network Building	D2 Strategic Planning Setting the Direction of the Company (part 2 of 2)	
		B2 Strategic Planning Overview of TOC for Strategic Planning (part 2 of 2)	D3 Supply Chain Strategic Placement of Constraints/Plant Design & Layout (part 2 of 2)	
		B3 Supply Chain Inventory...Asset or Liability?	D4 "Jonah" Upgrade Quantifying Bottom Line Impact	
		B4 Market Strategy Defining the Initial Market Offer	D5 Day to Day Communication Team Building (part 2 of 2)	
		B5 Day to Day Communication Skills Conflict Resolution		
		B6 Overview of TOC for Supply Chains (part 2 of 2)		
		B7 Finance/Measurements - TOC Decision Making Operational Measurements		
	Welcome Reception 6:00 - 8:30 PM	Software After-Hours 6:00 - 8:00 PM	Software After-Hours 6:00 - 8:00 PM	

"Necessary But Not Sufficient" One-Day Seminar by Eli Goldratt
 (separate registration required -- not included in TOC World registration)

Joint Executive MBA Program - Day 1

Introduction to Project Management - 1 Day Workshop

Introduction to Strategic Planning - 1 Day Workshop

Introduction to Supply Chain - 1 Day Workshop

Overview of TOC - 1 Day Workshop

For "Jonahs" Only - 1 Day Workshop

Joint Executive MBA Program - Day 2

Joint Executive MBA Program - Day 3

TOC for Healthcare Working Session - By Invitation Only

Defense/Aerospace Provider Summit - By Invitation Only

Joint Executive MBA Program - Day 4

Joint Executive MBA Program - Day 5